

REMARKS

This is intended as a full and complete response to the Office Action dated August 28, 2003, 2003, having a shortened statutory period for response set to expire on November 28, 2003. Please reconsider the claims pending in the application for reasons discussed below.

The Examiner and Mr. Tackett discussed the status of the claims in the application prior to filing of this response. Mr. Tackett informed the Examiner that a preliminary amendment was mailed with the RCE and sent a copy to the Examiner. The Examiner informed Mr. Tackett that the preliminary amendment filed with the RCE on May 20, 2003 was not received and that the Second Response to Final Office Action dated February 26, 2003 had been entered upon receipt of the RCE. Mr. Tackett noted that Applicants did not request entry of the Second Response to Final Office Action dated February 26, 2003 upon filing the RCE. However, in order to expedite prosecution, Applicants now authorize the entry of the amendments in the Second Response to Final Office Action dated February 26, 2003 and will address the rejection of the pending claims.

Claims 1, 5-8, 16, 18, and 21-25 remain pending in the application and are shown above as amended herein. Claims 1, 5-8, 16, 18, and 21-25 are rejected. Reconsideration of the rejected claims as amended is requested for reasons presented below.

Paragraph [0037] of the specification is amended to correct the formula for neopentylfurfuryl ether. Claims 1, 18, 22, and 25 are amended to clarify the invention and substantially conform to the lost preliminary amendment. Claim 5 is amended to clarify the invention and claim an additional aspect of the invention. Applicants have added new claims 26-38. Applicants submit that the changes made herein do not introduce new matter.

Claims 1, 5-8, 16, 18, 21-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Grill* (U.S. Patent No. 6,312,793) in view of *Scholsky, et al.* (U.S. Patent No. 5,010,166). The Examiner states that *Grill* describes a method for depositing a low dielectric constant film including introducing a siloxane comprising two

or more silicons and four or more methyl groups bonded to the silicon and at least one oxidizable chemical comprising an aldehyde without specifying the aldehyde to be a furfuryl, furfuryloxy, or neopentyl compound. The Examiner further states that *Scholsky, et al.* describes the use of furfuryl or furfuryloxy and neopentyl compounds to form a low dielectric thermoset coating having superior hardness, flexibility, and impact resistance. The Examiner asserts that it would have been obvious to use *Scholsky, et al.*'s aldehyde in place of *Grill*'s unspecified aldehydes to form a low dielectric thermoset coating having superior hardness, flexibility, and impact resistance. Applicants respectfully traverse the rejection.

Scholsky, et al. provides a process for producing a polyol polymer from an addition polymerizable monomer, an ethylenically-unsaturated monomer, *e.g.*, furfuryl methacrylate, and a polymerizable carbonyl-containing ringed molecule, *e.g.*, neopentyl carbonate. While *Scholsky, et al.* states that the polymer coatings have desirable physical properties, *Scholsky, et al.* does not teach or suggest that the polymer coatings have a low dielectric constant. Furthermore, there is no teaching or suggestion in *Scholsky, et al.* that the polymer coatings of *Scholsky, et al.* contain silicon. Applicants submit that there is no suggestion or motivation in the combination of *Scholsky, et al.* and *Grill* to use compounds provided in *Scholsky, et al.* as components of a polyol polymer in the silicon-containing, low dielectric constant multi-phase film of *Grill*.

Therefore, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing a siloxane comprising two or more silicons and from two to five carbons bonded to the silicons into a processing chamber, introducing at least one oxidizable chemical comprising a member selected from the group consisting of furfuryl, furfuryloxy, and neopentyl into the processing chamber, reacting the siloxane and the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the member in a conformal layer, and converting the member to dispersed voids, as recited in claim 1. Applicants respectfully request withdrawal of the rejection of claim 1 and of claims 16, 18, and 21, which depend thereon. Applicants also respectfully request allowance of new claims 26-28 and 35-36, which depend from claim 1.

With respect to claim 5, the Examiner refers to *Grill* column 3, line 14 to provide the at least one oxidizable chemical comprising silicon. As recited in claim 5, the at least one oxidizable chemical comprising silicon also comprises a furfuryl, furfuryloxy, or neopentyl member. *Grill* column 3, line 14 refers to a precursor containing at least some of Si, C, O, and H atoms. *Grill* does not teach or suggest an oxidizable chemical comprising silicon and a furfuryl, furfuryloxy, or neopentyl member. As discussed above with respect to claim 1, *Scholsky, et al.* does not describe silicon containing compounds. As neither *Grill* nor *Scholsky, et al.* provides or motivates an oxidizable chemical comprising silicon and a furfuryl, furfuryloxy, or neopentyl member, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing at least one oxidizable chemical comprising a member selected from the group consisting of furfuryl, furfuryloxy, and neopentyl into the processing chamber, wherein the at least one oxidizable chemical comprises silicon, reacting the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the member in a conformal layer, and converting the member to dispersed voids, as recited in claim 5. Applicants respectfully request withdrawal of the rejection of claim 5 and of claims 6-8, which depend thereon. Applicants also respectfully request allowance of new claims 29-32 and 37-38, which depend from claim 5.

With respect to claim 22, the Examiner states that *Grill* describes a method of depositing a low dielectric constant film, including introducing a siloxane comprising two or more silicons and four or more methyl groups bonded to the silicons in a processing chamber (*Grill*, column 3, lines 15-20), introducing at least one oxidizable chemical comprising a cyclic ring consisting of carbon, oxygen, and hydrogen into the chamber (*Grill*, column 3, line 33), and reacting the siloxane and the at least one oxidizable chemical with an oxidizing gas. Applicants have amended claim 22 to reflect that the cyclic ring of the oxidizable chemical consists of carbon and oxygen, rather than carbon, oxygen, and hydrogen. Applicants submit that *Grill's* broad description of precursors with ring structures containing C and H atoms does not teach or suggest precursors with a ring consisting of carbon and oxygen. While *Grill* states that oxygen may be present in the precursors and lists classes of compounds such as cyclic aldehydes,

there is no indication in *Grill* that any of the compounds described therein contain oxygen in a ring or include a ring consisting of carbon and oxygen. A listing of cyclic aldehydes does not teach or suggest precursors that include oxygen in a ring as asserted by the Examiner, as cyclic aldehydes suggest --C=O attached to a ring, *e.g.*, benzaldehyde, and not oxygen in a ring.

Applicants further submit that *Grill* in view of *Scholsky, et al.* does not suggest or motivate reacting a siloxane with an oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen. While *Scholsky, et al.* describes chemicals comprising a cyclic ring consisting of carbon and oxygen, there is no suggestion or motivation in the combination of *Grill* and *Scholsky, et al.* to react a siloxane with an oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen. As discussed above, there is no motivation to use the precursors of *Scholsky, et al.* in the process of *Grill*.

Therefore, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing a siloxane comprising two or more silicons and four or more methyl groups bonded to the silicons into a processing chamber, introducing at least one oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen into the processing chamber, reacting the siloxane and the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the cyclic ring in a conformal layer, and converting the cyclic ring to dispersed voids, as recited in claim 22. Applicants respectfully request withdrawal of the rejection of claim 22 and of claims 23-25, which depend thereon. Applicants also respectfully request allowance of new claims 33-34, which depend from claim 22.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



Keith M. Tackett
Registration No. 32,008
MOSER, PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Agent for Applicant(s)